an accumulator including a first chamber in fluid communication with said irrigation line, a second chamber, and a flexible membrane that separates said first chamber from said second chamber and deflects in response to a change in an amount of fluid pressure in the irrigation line, said first chamber of said accumulator providing a reservoir for pressurized fluid and supplying said pressurized fluid to said irrigation line in response to reduced speed of said pump; and,

a controller including a pressure transducer in fluid communication with said second chamber to detect a change of fluid pressure in said second chamber caused by the deflection of the flexible membrane and to adjust a flowrate of fluid passing through said irrigation line to counteract the change in the amount of fluid pressure in the irrigation line by varying a speed of said pump.

2. Cancelled.

3. The irrigation system of claim 1, further comprising a valve coupled to said irrigation line and said controller.

4. (Amended) The irrigation system of claim 1, wherein said controller activates an indicator to provide a warning to replace said irrigation reservoir.

5. (Twice Amended) The irrigation system of claim 1, wherein said controller varies said pump speed in response to a variation in the irrigation line pressure sensed by said pressure transducer that rises above a desired range of pressures.

6. The irrigation system of claim 1, wherein said controller can determine a flowrate generated by said pump.

7. The irrigation system of claim 6, wherein said controller determines an actual fluidic resistance from the flowrate and provides an output signal if the actual fluidic resistance is greater than a threshold value.

8. The irrigation system of claim 6, wherein said controller determines an actual volume of irrigation fluid pumped by said pump from the flowrate and provides an output signal if the actual volume of irrigation fluid is greater than a threshold value.

9. Cancelled.

10. Cancelled.

11. Cancelled.

12. Cancelled.

13. (ThriceAmended) A medical system, comprising:

an irrigation system that includes

an irrigation reservoir,

an irrigation pump that is coupled to said irrigation reservoir,

an irrigation line coupled to said pump,

an accumulator including a first chamber in fluid communication with said irrigation line, a second chamber, and a flexible membrane that separates said first chamber from said second chamber and deflects in response to a change in an amount of fluid pressure in the irrigation line, said first chamber of said accumulator

providing a reservoir of pressurized fluid and supplying said pressurized fluid to said irrigation line in response to reduced speed of said pump; and,

a controller including a pressure transducer in fluid communication with said second chamber and to control the pressure within said irrigation line through monitoring a change of fluid pressure within said second chamber of said accumulator; and

an aspiration system that includes

an aspiration pump,

an aspiration line coupled to said aspiration pump, and

an aspiration pressure sensor that senses a vacuum pressure within said aspiration line.

14. Cancelled.

15. Cancelled.

16. (Amended) The medical system of claim 13, wherein said controller maintains an intraocular pressure by varying a speed of said irrigation pump and a flowrate through said irrigation line.

17. (Thrice Amended) The medical system of claim 16, wherein said controller varies said speed of said irrigation pump in response to a variation in fluid pressure in said first chamber of said accumulator as sensed by said pressure transducer.

18. The medical system of claim 13, wherein said controller can determine a flowrate generated by said irrigation pump.

19. The medical system of claim 18, wherein said controller determines an actual fluidic resistance from the flowrate and provides an output signal if the actual fluidic resistance is greater than a threshold value.

20. (Amended) The medical system of claim 18, wherein said controller determines an actual volume of irrigation fluid pumped by said irrigation pump from the flowrate and provides an output signal if the actual volume of irrigation fluid is greater than a threshold value.

21. (Amended) The medical system of claim 19, wherein said controller provides an output signal that is used to control power of a medical device that is coupled to said irrigation line and said aspiration line if the actual fluidic resistance is greater than a device threshold value.

22. (Amended) The medical system of claim 19, wherein said controller changes a speed of said aspiration pump if the actual fluidic resistance is greater than a threshold resistance value.

23. Cancelled.

24. Cancelled.

25. Cancelled.

26. Cancelled.

27. Cancelled.

28. Cancelled.

29. Cancelled.

30. Cancelled.

31. Cancelled.

32. Cancelled.

33. Cancelled.

34. Cancelled.

35. (ThriceAmended) The apparatus of claim 37 further comprising:

a second pressure sensor in fluid communication with the aspiration line;

an aspiration pump in fluid communication with the aspiration line; and,

a controller coupled with the first and the second pressure sensors to sense a differential pressure between the irrigation line and the aspiration line and to vary a speed of the irrigation pump in efforts to maintain a flow rate in the irrigation line substantially in proportion to the flow rate in the aspiration line.

36. Cancelled.

37. (Twice Amended) An apparatus comprising:

an irrigation pump;

an irrigation line in fluid communication with the irrigation pump;

a first pressure sensor in fluid communication with the irrigation line;

an aspiration line; and,

a first accumulator located between the irrigation line and the first pressure sensor, the first accumulator including a first chamber in fluid communication with the irrigation line temporarily to provide stored pressurized fluid in response to dislodgment of an occlusion of the aspiration line after the occlusion has already caused a substantially reduced speed of the irrigation pump, a second chamber in fluid communication with the first pressure sensor and a flexible membrane which separates the first and the second chamber.

38. The apparatus of claim 37 wherein the first accumulator is sized to maintain an intraocular pressure of an eye into which the medical device is to be inserted.

39. The apparatus of claim 37, further comprising a second accumulator in fluid communication with the second chamber.

40. The apparatus of claim 35, wherein the controller is further to determine that an occlusion of the aspiration line has occurred if the differential pressure increases.

41. (Amended) An irrigation system for a medical device, comprising:

a pump;

an irrigation line coupled to said pump;

a controller that varies a speed of said pump to adjust a flowrate of fluid passing through said irrigation line; and

an accumulator including (i) a first chamber operating as a reservoir to store pressurized fluid separately from fluid passing through said irrigation line, (ii) a second chamber in fluid communication with said controller, and (iii) a flexible membrane that separates said first chamber from said second chamber, said accumulator provides said pressurized fluid from said first chamber to said irrigation line to maintain intraocular pressure of an eye.

42. The irrigation system of claim 41 further comprising an irrigation reservoir coupled to said irrigation line.

43. (Amended) The irrigation system of claim 42, wherein said pressurized fluid from said first chamber is provided to said irrigation line to mitigate transit latency of fluid from said irrigation reservoir.

44. The irrigation system of claim 41, wherein said flexible membrane of said accumulator is deflected in response to a change in fluid pressure in said irrigation line and causes a change in fluid pressure in said second chamber.

45. The irrigation system of claim 44, wherein said controller including a pressure transducer in fluid communication with said second chamber to detect the change of fluid pressure in said second chamber caused by deflection of said flexible membrane and to adjust a flowrate of said fluid passing through said irrigation line to counteract the change in fluid pressure in said irrigation line by varying the speed of said pump.

46. The irrigation system of claim 42, wherein said controller activates an indicator to provide a warning to replace said irrigation reservoir.

47. Cancelled.

48. (Amended) An irrigation system for a medical device comprising:

an irrigation line;

a pump coupled to said irrigation line;

an accumulator including a first chamber in fluid communication with said irrigation line, a second chamber, and a flexible membrane that separates said first chamber from said second chamber and deflects in response to a change in an amount of fluid pressure in the irrigation line, said first chamber of said accumulator operating as a reservoir to store fluid separately from fluid passing through said irrigation line, said fluid provided from said first chamber to said irrigation line to temporarily maintain intraocular pressure of an eye; and,

a controller including a pressure transducer in fluid communication with said second chamber, said controller to detect a change of fluid pressure in said second chamber caused by the deflection of the flexible membrane and to adjust a flowrate of fluid passing through said irrigation line to counteract a change in the amount of fluid pressure in said irrigation line by varying a speed of said pump.

49. The irrigation system of claim 48 further comprising an irrigation reservoir coupled to said irrigation line.

50. The irrigation system of claim 49, wherein said fluid from said first chamber is provided to said irrigation line to account for a delay of additional fluid being provided from said irrigation reservoir.